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Docket: AM-1622.D1

Amendments to the claims

1. (Canceled)

2. (Previously presented) The method of Claim 29, wherein said depositing step comprises thermal spraying to form said boron carbide layer upon said surface.

3. (Previously presented) The method of Claim 29, wherein said depositing step comprises chemical vapor deposition.

4 – 7. (Canceled)

8. (Previously presented) The method of Claim 29, wherein said boron carbide layer comprises B_4C.

9. (Previously presented) The method of Claim 29, wherein said boron carbide layer comprises particles of B_4C.

10. Previously presented) The method of Claim 29, wherein said boron carbide layer comprises a composition between B_4C and $B_{13}C_3$.

11. (Previously presented) The method of Claim 29, wherein said boron carbide layer comprises between 14 to 30 wt% of carbon relative to a total weight of carbon and boron.

12. (Previously presented) The structure of Claim 11, wherein said boron carbide layer comprises between 18 to 25 wt% of carbon relative to a total weight of carbon and boron.

13 – 16. (Canceled)

17. (Previously presented) A method of forming a boron carbide layer on an aluminum-based substrate, comprising:

an initial step of roughening at least a first portion of a surface of an aluminum-based substrate;

anodizing said surface of said aluminum-based substrate to form an anodization layer, wherein said anodizing step anodizes said first portion;

removing said anodization layer from a second portion of said substrate adjacent to said first portion and separated therefrom by a predetermined boundary, said roughened first portion extending below a portion of said anodization left by said removing step; and

then depositing a boron carbide layer upon said anodization layer, wherein said depositing step deposits said boron carbide layer on said anodization layer overlying said anodized first portion.

18. (Currently amended) The method of Claim [[16]] 17, wherein a material of said substrate is selected from the group consisting of aluminum and aluminum alloys.

19. (Currently amended) The method of Claim [[16]] 17, wherein said boron carbide layer comprises B_4C.

20. (Currently amended) The method of Claim [[16]] 17, wherein said boron carbide layer comprises particles of B_4C.

21. (Currently amended) The method of Claim [[16]] 17, wherein said boron carbide layer comprises a composition between B_4C and $B_{13}C_3$.

22. (Currently amended) The method of Claim [[16]] 17, wherein said boron carbide layer comprises between 14 to 30 wt% of carbon relative to a total weight of carbon and boron.

23. (Previously presented) The structure of Claim 22, wherein said boron carbide layer comprises between 18 to 25 wt% of carbon relative to a total weight of carbon and boron.

24 – 27. (Canceled)

28. (Previously presented) The structure of Claim 29, wherein said roughening step is performed before said anodizing step.

29. (Previously presented) A method of coating boron carbide on an aluminum-based substrate, comprising the steps of:

roughening a surface of a substrate to a value of surface finish R_a of at least 2.5μm, wherein said substrate is composed of an aluminum-based material selected from the group consisting of substantially pure aluminum and aluminum alloys including at least 90 wt% elemental aluminum;

anodizing said substrate to form an anodization layer;

removing said anodization layer from only a first portion and not from a second portion of said surface of said substrate; and

depositing a boron carbide layer upon said anodization layer, wherein said boron carbide layer is deposited on both said first and second portions after said removing step.

30. (Previously presented) The process of Claim 17, wherein said boron carbide layer is deposited onto said anodized first portion and second portion of said substrate.

31. (Previously presented) A method of forming a boron carbide layer on an aluminum-

based substrate, comprising:

an initial step of anodizing a surface of an aluminum-based substrate to form an anodization layer;

then removing said anodization layer from a first portion of said substrate separated by a predetermined boundary from a second portion of said substrate from which said anodization layer is not removed; and

then depositing a boron carbide layer upon said anodization layer, wherein said depositing step deposits said boron carbide layer in a layer extending over said first portion of said substrate and across said boundary to a neighboring part of said second portion of said substrate.

32 – 33. (Canceled)

34. (Currently amended) The method of Claim [[1]] 29, wherein said surface finish R_a is no more than 7.6μm.

35. (Previously presented) The method of Claim 34, wherein said first and second parts are only partially co-extensive.

36. (Previously presented) The method of Claim 34, wherein said anodization layer contacts roughened and unroughened portions of said surface and said boron carbide layer contacts other roughened and unroughened portions of said surface.

37. (Previously presented) The method of Claim 36, wherein said boron carbide layer only partially covers said anodization layer.